

AMENDMENTS TO THE SPECIFICATION:

Please amend paragraph [0083] as follows:

[0083] The Polymer (I-b) having the structural unit represented by the above Formula (2) and the structural unit represented by the above Formula (4) as repeating units can be produced by the following method.

(1) Reaction between the polymer having hydroxyl groups at both terminals ~~represented by the above formula (3),~~ (I-a), and a dicarboxylic acid corresponding to Formula (4).

(2) Reaction between the epoxy-terminated polymer and a dicarboxylic acid corresponding to Formula (4).

(3) Reaction between a polyester polyol obtained by condensation reaction between a dicarboxylic acid corresponding to Formula (4) and a diol, and an epoxy-terminated polymer.

Please amend paragraph [0088] as follows:

[0088] The Polymer (I-c) having the structural unit represented by the above Formula (2) and the structural unit represented by Formula (5) as repeating units can be produced by the following method.

(1) Reaction between the above-described epoxy-terminated polymer and a diisocyanate corresponding to Formula (5).

(2) Reaction between the above-described Polymer-~~(3)~~ (I-a) and a diisocyanate corresponding to Formula (5).

(3) Reaction between the above-described Polymer (I-b) and a diisocyanate corresponding to Formula (5).

Please amend paragraph [0096] as follows:

[0096] wherein A and R are as defined above in Formula (1); R⁵ and R⁶, which may be identical or different, are respectively a hydrogen atom, an alkyl group, a cycloalkyl group, an aryl group, or an alkenyl group, all having 1 to 10 carbon atoms; and $[[n]]$ m is a number from 1 to 3,000.

Please amend paragraph [0223] as follows:

[0223] The alkyl group for ~~R¹⁴~~ R¹⁷ is preferably a straight-chained, branched or cyclic alkyl group having 1 to 18 carbon atoms. Specific examples of the alkyl group include those exemplified for R in Formula (14).

Please amend paragraph [0246] as follows:

[0246] The binding resin (a) may be any of those comprising the thermoplastic resins generally added to the developer for static charge image, and is not particularly limited. For example, mention may be made of those comprising styrene resins, styrene-acrylic-~~ester~~ ester-acrylic acid copolymers, acrylic resins, styrene-butadiene resins, ketone resins, maleic acid resins, polyester resins, polyvinyl acetate resins, coumarone resins, phenolic resins, silicone resins, polyurethane, epoxy resins, terpene resins, polyvinyl butyral, polybutyl methacrylate, polyvinyl chloride, polyethylene, polypropylene, polybutadiene, ethylene-vinyl acetate copolymers, rosin resins and the like.

Please amend paragraph [0291] as follows:

[0291] Compound (24) used as catalyst was synthesized according to Synthesis Example 6 of JP-A No. 2003-73412, and double bond-terminated polyethylene at one end was synthesized according to Example [[9]] 8 of the same publication of patent application.

To a 2000 mL-stainless autoclave thoroughly purged with nitrogen, 1000 mL of heptane was charged at room temperature, and the system was heated to 150°C. Subsequently, the autoclave was pressurized with ethylene to 30 kg/cm²G, and the temperature was maintained. To the autoclave, 0.5 mL (0.5 mmol) of a hexane solution of MMAO (Tosoh Finechem Corporation) (1.00 mmol/mL in terms of aluminum atoms) was fed with pressure, and then 0.5 mL (0.0001 mmol) of a toluene solution (0.0002 mmol/mL) of the following Compound (24) was fed with pressure to initiate polymerization. Under an ethylene gas atmosphere, polymerization was carried out at 150°C for 30 minutes, and then the polymerization was terminated by feeding a small amount of methanol. The obtained polymer solution was added to 3 liters of methanol containing a small amount of hydrochloric acid to precipitate out the polymer. The polymer was washed with methanol and then dried under reduced pressure at 80°C for 10 hours.

Please amend paragraphs [0306] - [0307] as follows:

[0306] (SYNTHESIS EXAMPLE 7)

(Synthesis of epoxy-terminated polymer (E-3))

The same operation as in Synthesis Example 2 was carried out, except that the double bond-terminated polymer was changed to terminal unsaturated ethylene-

propylene copolymer (P-3) obtained in Synthesis Example [[4]] 5 ($M_w = 1730$, $M_n = 994$), to obtain 23.9 g (olefin conversion rate 100%, yield 94%) of epoxy-terminated polymer (E-3) as a white solid.

$^1\text{H-NMR } \delta(\text{C}_2\text{D}_2\text{Cl}_4)$ 0.80 - 0.88 (m), 0.9 - 1.6 (m), 2.37 - 2.40 (1H, dd, $J = 2.64, 5.28$ Hz), 2.50 (m), 2.66 (1H, dd, $J = 3.96, 5.28$ Hz), 2.80 - 2.86 (1H, m), 2.94 (m)

$M_w = 1720$, $M_w/M_n = 1.58$ (GPC)

Melting point (T_m) 99.7°C

Hardness (degree of penetration) 0.2 mm

Melt viscosity 32 cp (140°C)

Softening point 114.5°C

Temperature for 5% weight reduction 334°C (TGA).

[0307] (SYNTHESIS EXAMPLE 8)

(Synthesis of epoxy-terminated polymer (E-4))

The same operation as in Synthesis Example 2 was carried out, except that the double bond-terminated polymer was changed to the terminal unsaturated ethylene-propylene copolymer (P-4) obtained in Synthesis Example [[5]] 6 ($M_w = 1310$, $M_n = 790$), to obtain 9.53 g (olefin conversion rate 100%, yield 94%) of epoxy-terminated polymer (E-4) as a white solid.

$^1\text{H-NMR } \delta(\text{C}_2\text{D}_2\text{Cl}_4)$ 0.80 - 0.88 (m), 0.9 - 1.6 (m), 2.37 - 2.40 (1H, dd, $J = 2.97, 5.28$ Hz), 2.50 (m), 2.66 (1H, dd, $J = 3.96, 5.28$ Hz), 2.80 - 2.86 (1H, m), 2.95 (m)

$M_w = 1470$, $M_w/M_n = 1.54$ (GPC)

Melting point (T_m) 73.6°C

Melt viscosity 19 cp (140°C)

Softening point 101.5°C

Temperature for 5% weight reduction 322°C (TGA).

Please amend paragraphs [0315] - [0316] as follows:

[0315] (EXAMPLE 6)

(Synthesis Example 4 for polyether resin)

The reaction was carried out in the same manner as in Example [[1,]] 3, except that PEG1000 was used instead of PEG600 in Example [[1,]] 3, to obtain Copolymer (4). This Copolymer (4) was subjected to ¹H-NMR measurement, and it was found that the copolymer had a composition of epoxy-terminated polymer (E-1) : PEG1000 = 2 moles : 1 mole. The properties are as follows.

¹H-NMR δ (C₂D₂Cl₄) 0.88 (t, 6H, J = 6.6 Hz), 1.18 - 1.5 (m), 3.52 - 3.65 (m, 90H).

[0316] (EXAMPLE 7)

(Synthesis Example 5 for polyether resin)

The reaction was carried out in the same manner as in Example [[2,]] 4, except that the epoxy-terminated polymer (E-3) was used instead of epoxy-terminated polymer (E-1) in Example [[2,]] 4, to obtain Copolymer (5). This Copolymer (5) was subjected to ¹H-NMR measurement, and it was found that the copolymer had a composition of epoxy-terminated polymer (E-3) : PEG600 = 4 moles : 1 mole. The properties are as follows.

¹H-NMR δ (C₂D₂Cl₄) 0.82-0.92 (m), 1.00 - 1.70 (m), 3.25 - 3.76 (m)

Melting point (T_m) 108°C.

Please amend paragraph [0336] as follows:

[0336] (EXAMPLE 26)

The reaction was carried out in the same manner as in Example 25, except that 2-aminoethanol was used instead of diethanolamine in Example 25, to obtain a corresponding polymer (with respect to Formula (14), A: a group formed by ethylene polymerization ($M_w = 2015$), R: hydrogen atom, one of X and Y being a hydroxyl group and the other being a 2-hydroxyethylamino group) at an epoxy conversion rate of 100%. The properties are as follows.

$^1\text{H-NMR } \delta(\text{C}_2\text{D}_2\text{Cl}_4)$ 0.88 (t, 3H, $J = 6.6$ Hz), 0.97 - 1.73 (m), 2.50 - 2.63 (m, 1H), [[.72]] 2.72 - 2.88 (m, 3H), [[2.62 - 2.73]] 3.62 - 3.73 (m, 3H)

Melting point (T_m) 121°C .

Please amend paragraph [0346] as follows:

[0346] (EXAMPLE 36)

204 mg of the polymer obtained in Example [[16]] 17 (with respect to Formula (14), A: a group formed by ethylene polymerization ($M_w = 2015$), R: hydrogen atom, one of X and Y being a hydroxyl group and the other being a 2-methoxyethoxy group) and 2.2 g of n-nonanoic acid were introduced into a 25-mL flask, and stirred at 150°C for 8 hours. Water was added to terminate the reaction, acetone was further added to crystallize the reaction product, and the resulting solid was collected by filtration. The obtained solid was washed with stirring with a mixed solution of a saturated aqueous solution of sodium hydrogen carbonate and acetone, and further washed with stirring twice with an aqueous acetone solution and three

times with acetone, and then the resulting solid was collected by filtration. The solid was dried under reduced pressure at room temperature, to obtain 186 mg of a corresponding polymer (with respect to Formula (14), A: a group formed by ethylene polymerization ($M_w = 2015$), R: hydrogen atom, one of X and Y being a nonanoyloxy group and the other being a 2-methoxyethoxy group) as a solid, at a hydroxyl conversion rate of 100%. The properties are as follows.

$^1\text{H-NMR}$ $\delta(\text{C}_2\text{D}_2\text{Cl}_4)$ 0.88 (t, 3H, $J = 6.9$ Hz), 0.95 - 1.73 (m), 2.26 (t, 2H, $J = 7.3$ Hz), 3.32 (s, 3H), 3.43 - 3.62 (m, 6H), 4.90 - 5.03 (m, 1H)

IR (cm^{-1}) 2905, 1739, 1471, 1168, 719

Melting point (T_m) 117°C .

Please amend page 153, line 4 to page 154, line 1 as follows:

Toluene was dried from the solids that were not soluble in toluene, to obtain 19.6 g of a polymer having the same structure as that of the polymer obtained from the toluene solution (a polymer having a polyethylene glycol group for either X or Y and an amino group having polyethylene glycol groups for both R^8 and R^9 with respect to the moiety Formula (16) for the other of X and Y, with respect to Formula (14) (A: a group formed by copolymerization of ethylene and propylene (~~$M_w = 1687$~~), R: hydrogen atom or a methyl group)). Based on $^1\text{H-NMR}$ measurement of the obtained polymer, it was found from a comparison of the integral value for the methyl group and methylene group of the polyolefin groups A and R (shift values: 0.85 – 0.92 ppm (methyl group), 1.09 – 1.51 ppm (methylene group)) and the integral value for the alkylene group of the PEG moiety (shift value: 3.33 – 3.73 ppm), that the weight ratio of the polyolefin block and the polyethylene glycol block was 62:38.

Please amend page 154, lines 5-21 as follows:

Toluene was dried from the solids that were not soluble in toluene, to obtain 19.6 g of a polymer having the same structure as that of the polymer obtained from the toluene solution (a polymer having a polyethylene glycol group for either X or Y and an amino group having polyethylene glycol groups for both R⁸ and R⁹ with respect to the moiety Formula (16) for the other of X and Y, with respect to Formula (14) (A: a group formed by copolymerization of ethylene and propylene (~~M_w = 1687~~), R: hydrogen atom or a methyl group)). Based on ¹H-NMR measurement of the obtained polymer, it was found from a comparison of the integral value for the methyl group and methylene group of the polyolefin groups A and R (shift values: 0.85 – 0.92 ppm (methyl group), 1.09 – 1.51 ppm (methylene group)) and the integral value for the alkylene group of the PEG moiety (shift value: 3.33 – 3.73 ppm), that the weight ratio of the polyolefin block and the polyethylene glycol block was 62:38.

Please amend paragraph [0367] as follows:

[0367] (EXAMPLE 56)

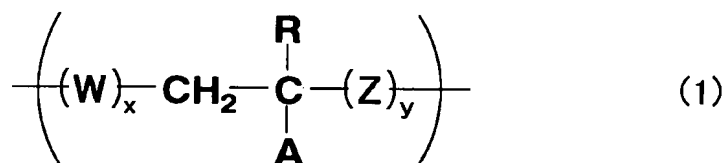
(Evaluation 2 of antistatic property in LLDPE resin)

A hot pressed sheet for evaluation was produced in the same manner as in Example [[5]] 55, except that the Copolymer (2) obtained in Example 4 was used instead of the Copolymer (1), and 0.15 g of sodium perchlorate monohydrate was used, and was subjected to evaluation. The surface resistance value was $2.91 \times 10^{11} \Omega$. The contact angle of water was 52°.

Please replace the Abstract with the following amended Abstract:

ABSTRACT

Polymers having polyolefin segments as the side chain, with a structural unit represented by the following Formula (1):



wherein A is an olefin polymer having a weight average molecular weight of 400 to 500,000; R is H, an alkyl group, or an aralkyl group; W and Z are each O, HN, or S; and x and y are each 0 or 1, with the proviso that at least one of them is 1. The polymer can be applied as an antistatic agent, a cosmetic additive, a releasing agent for toner, a pigment dispersant, a lubricant for vinyl chloride resins, a coating material, an emulsion composition and the like.